



Water shortages and countermeasures for sustainable utilisation in the context of climate change in the Yellow River Delta region, China

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Abstract:

With an increasing population and rapid development of the economy and society of the Yellow River Basin region, the Yellow River is at crisis point. The discrepancy between supply and demand of water resources is a key issue. In 2000-2006, the mean annual discharge of the Yellow River entering the delta was 13.2 billion m³, a reduction of 18.6 billion m³ compared with the 1980s, and 9 billion m³ less than in the 1990s. The water requirements of various sectors are increasing. Large amounts of water essential to maintain the health of the delta ecosystem have been diverted for other users. The lower river channel is shrinking and the threat of flooding is becoming severe. Moreover, water pollution is increasing to a serious level; the river mouth ecosystem is subject to degradation. Due to overall decreased flow into the delta, and almost no flow into the delta for much of the year except in wet periods, biodiversity is threatened and there has been degradation of the ecological environment. In view of the water scarcity and variation in water supply, particularly in the context of climate change, measures need to be taken to realise sustainable water use in the Yellow River Delta region. In view of the lack of a complete index system for sustainable utilisation of regional water resources in China, this paper examines the major countermeasures for sustainable water use in the region. A rational adjustment mechanism for water prices is needed. Adjustment of agricultural infrastructure and water saving need to be directed by water prices, and thus the reasonable exploitation of groundwater must also be directed by water prices. Participation of the public is to be encouraged, with the development of a water user association that will become involved in formulating water rights, water allocation and water prices. Decision-making, management and supervision of this association will be done in a democratic way to promote the social management of water saving. © 2011 Taylor & Francis.

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Climate Change and Human Health Literature Portal

Policymaker, Public

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Food/Water Quality, Food/Water Security

Extreme Weather Event: Flooding

Geographic Feature:

resource focuses on specific type of geography

Freshwater

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: China

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content